

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) An implantable lead electrode assembly for use with an implantable cardioverter-defibrillator subcutaneously implanted outside a patient's ribcage between the third and twelfth ribs, wherein the lead electrode assembly comprises:

an electrode having a proximal end and a distal end, and top and bottom surfaces;

a backing layer positioned over the top of the electrode, the backing layer having top and bottom surfaces, wherein the bottom surface of the backing layer contacts the top surface of the electrode; and

a fin;

wherein the backing layer forms the fin and the fin projects from the top surface of the backing layer; wherein the electrode, backing layer, and fin are adapted for implantation in a patient.

2-58. (cancelled)

59. (previously presented) The lead electrode assembly of claim 1, wherein at least a portion of the fin projects substantially perpendicular from the backing layer.

60. (previously presented) The lead electrode assembly of claim 1, wherein the backing layer is attached directly to the electrode, and the backing layer is substantially the same size as the electrode.

61. (previously presented) The lead electrode assembly of claim 1, further comprising a lead electrically coupled to the distal end of the electrode.

62. (previously presented) The lead electrode assembly of claim 1, wherein the backing layer is made of a polymer.

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

63. (previously presented) The lead electrode assembly of claim 62, wherein the backing layer is made of polyurethane.

64. (previously presented) The lead electrode assembly of claim 1, further comprising a cover disposed over the backing layer and fin.

65. (previously presented) The lead electrode assembly of claim 64, wherein the cover is molded and encloses at least a portion of the bottom of the electrode.

66. (previously presented) The lead electrode assembly of claim 1, wherein the backing layer includes a first backing region having a first edge and a second backing region having a second edge; the first and second backing regions separated by an indented fin-forming region; the fin-forming region divided into first and second fin sides; wherein the backing layer is attached to the electrode such that the first and second edges of the first and second backing regions meet, and the fin-forming region folds to form the projecting fin.

67. (previously presented) The lead electrode assembly of claim 66, further comprising a reinforcing polymer between the first and second fin sides.

68. (previously presented) The lead electrode assembly of claim 1, wherein the fin has a proximal and a distal end, wherein the proximal end of the fin is sloped.

69. (previously presented) The lead electrode assembly of claim 1, wherein the backing layer is made of a flexible material.

70. (previously presented) The lead electrode assembly of claim 69, wherein the flexible material is silicone.

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

71. (previously presented) The lead electrode assembly of claim 69, wherein the fin is flexible such that it folds thereby reducing a height of the fin.

72. (previously presented) The lead electrode assembly of claim 1, wherein the fin has first and second sides, and the first and second sides are connected at a bottom and top of the fin, such that the fin is substantially tubular.

73. (previously presented) The lead electrode assembly of claim 72, wherein the fin has a proximal and a distal end, wherein the first and second sides of the fin are connected along a length of the proximal end such that the fin is closed at the proximal end and open at the distal end.

74. (previously presented) The lead electrode assembly of claim 73, wherein the proximal end of the fin is sloped.

75. (currently amended) An implantable lead electrode assembly comprising:
an electrode having a discharging face and an opposing face, and proximal and distal ends;

a backing layer attached to the opposing face of the electrode, the backing layer having a base portion and an integral fin, wherein the base portion and fin are substantially planar;

wherein the fin extends laterally from and in the same plane as beyond the base portion of the backing layer, the fin extending beyond an outside edge of the base portion of the backing layer.

76. (currently amended) The implantable lead electrode assembly of claim 75, wherein the fin extends laterally from a side of the backing layer such that a top edge of the fin is substantially parallel with and in the same plane as the side of the backing layer.

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

77. (previously presented) The implantable lead electrode assembly of claim 75, further comprising a cover attached to the backing layer, the cover enclosing the backing layer, fin, opposing face of the electrode, and at least a portion of the discharging face of the electrode.

78. (previously presented) The implantable lead electrode assembly of claim 77, further comprising a reinforcing polymer disposed between the fin and cover.

79. (previously presented) The implantable lead electrode assembly of claim 75, wherein the fin has a proximal end and a distal end, and the proximal end is sloped.

80. (previously presented) The implantable lead electrode assembly of claim 75, further comprising a lead electrically coupled to the distal end of the electrode.

81. (currently amended) An implantable lead electrode assembly comprising:
an electrode having a first face and a second face;
a backing layer disposed over the first face of the electrode; and
a flexible fin disposed on the backing layer, the fin extending away from the first face of the electrode, the flexible fin configured such that with the application of pressure against the fin, the fin moves between an extended position in which the fin has a first appendage height to a folded position in which the appendage height of the fin is reduced, the fin moving back to the extended position when the pressure is released; wherein the electrode, backing layer, and fin are adapted for implantation in a patient.

82. (previously presented) The implantable lead electrode assembly of claim 81, wherein the fin includes a rigid head and flexible connector, the flexible connector attaching the rigid head to the backing layer.

83. (currently amended) The implantable lead electrode assembly of claim 82, wherein the flexible connector is adapted such that the fin is moveable moves, upon application of lateral

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

pressure, from a first position in which the rigid head extends substantially perpendicular from the electrode to a second position in which the rigid head is substantially parallel to the electrode.

84. (currently amended) An implantable lead electrode assembly comprising:
an electrode having a first face and a second face;
a backing layer disposed over the first face of the electrode; and
an appendage disposed on the first face of the electrode and extending from the first face of the electrode through the backing layer, wherein the appendage does not extend beyond the second face of the electrode; wherein the electrode, backing layer, and appendage are adapted for implantation in a patient.

85. (previously presented) The lead electrode assembly of claim 84, wherein the appendage includes a rod having first and second extensions and a loop therebetween, wherein the first and second extensions are attached to the first face of the electrode and are covered by the backing layer, and the loop extends through an opening in the backing layer.

86. (previously presented) The lead electrode assembly of claim 84, wherein the appendage is made of platinum or titanium.

87. (new) An implantable lead electrode assembly for use with an implantable cardioverter-defibrillator subcutaneously implanted outside a patient's ribcage between the third and twelfth ribs, wherein the lead electrode assembly comprises:

an electrode having a proximal end and a distal end, and top and bottom surfaces;
a backing layer positioned over the top of the electrode; and
a fin;

wherein the backing layer forms the fin and the fin projects from the backing layer, the backing layer including a first backing region having a first edge and a second backing region having a second edge; the first and second backing regions separated by an indented fin-forming region; the fin-forming region divided into first and second fin sides; wherein the backing layer is attached to the electrode such that the first and second edges of the first and second backing

Appl. No. 10/013,980
Amdt dated July 29, 2005
Reply to Office Action of April 25, 2005

regions meet, and the fin-forming region folds to form the projecting fin; wherein the electrode, backing layer, and fin are adapted for implantation in a patient.

88. (new) The lead electrode assembly of claim 87, further comprising a reinforcing polymer between the first and second fin sides.

89. (new) An implantable lead electrode assembly for use with an implantable cardioverter-defibrillator subcutaneously implanted outside a patient's ribcage between the third and twelfth ribs, wherein the lead electrode assembly comprises:

an electrode having a proximal end and a distal end, and top and bottom surfaces;

a backing layer positioned over the top of the electrode; and

a fin having first and second sides, and the first and second sides are connected at a bottom and top of the fin, such that the fin is substantially tubular;

wherein the backing layer forms the fin and the fin projects from the backing layer; wherein the electrode, backing layer, and fin are adapted for implantation in a patient.

90. (new) The lead electrode assembly of claim 89, wherein the fin has a proximal and a distal end, wherein the first and second sides of the fin are connected along a length of the proximal end such that the fin is closed at the proximal end and open at the distal end.

91. (new) The lead electrode assembly of claim 90, wherein the proximal end of the fin is sloped.

92. (new) An implantable lead electrode assembly comprising:

an electrode having a discharging face and an opposing face, and proximal and distal ends;

a backing layer attached to the opposing face of the electrode, the backing layer having a base portion and an integral fin;

a cover attached to the backing layer, the cover enclosing the backing layer, fin, opposing face of the electrode, and at least a portion of the discharging face of the electrode; and

Appl. No. 10/013,980
Amendt dated July 29, 2005
Reply to Office Action of April 25, 2005

a reinforcing polymer disposed between the fin and cover;
wherein the fin extends beyond the base portion of the backing layer.

93. (new) An implantable lead electrode assembly comprising:

an electrode having a first face and a second face;

a backing layer disposed over the first face of the electrode; and

an appendage disposed on the first face of the electrode and extending through the backing layer, the appendage including a rod having first and second extensions and a loop therebetween, wherein the first and second extensions are attached to the first face of the electrode and are covered by the backing layer, and the loop extends through an opening in the backing layer; wherein the electrode, backing layer, and appendage are adapted for implantation in a patient.